

CLAIMS

[1] An organic EL drive circuit including a current drive circuit, which generates PWM pulse having pulse width corresponding to display data corresponding to luminance of organic EL elements and outputs a drive current for driving the organic EL elements for a time period corresponding to the PWM pulse, comprising a peak current generator circuit for generating a peak current on the drive current, wherein the current drive circuit is provided for each of output pins connected to the respective organic EL elements and the peak current generator circuits generates peak currents larger than the drive current corresponding to the display data when a value of the display data is a predetermined value or a value lower than the predetermined value.

[2] The organic EL drive circuit as claimed in claim 1, wherein the peak current initially charges the organic EL elements or emits light initially when the display data value is the predetermined value or lower.

[3] The organic EL drive circuit as claimed in claim 2, further comprising means for converting the display data into light emitting time data, wherein the current drive circuit includes an output current source, the PWM pulse has the pulse width corresponding to the light emitting time data, the output stage current source is driven by the PWM pulse and the predetermined value corresponds to a display data value of low luminance with which luminance difference on a display screen is unclear.

[4] The organic EL drive circuit as claimed in claim 3, wherein each of the current drive circuit includes the PWM

pulse generator circuit for generating the PWM pulse in response to the light emitting time data corresponding to the current drive circuit.

[5] The organic EL drive circuit as claimed in claim 4, wherein each of the current drive circuits includes a first digital comparator for comparing the light emitting time data with light emitting time data corresponding to the predetermined value, wherein the predetermined value is a light emitting time data corresponding to the display data of low luminance and the peak current generator circuit generates the peak current corresponding to the output of the first digital comparator.

[6] The organic EL drive circuit as claimed in claim 5, further comprising a clock generator circuit, wherein the PWM pulse generator circuit includes a counter for counting clocks from the clock generator circuit and a second digital comparator for comparing a count value of the counter with the light emitting time data and the PWM pulse generator circuit generates the PWM pulse corresponding to a result of the comparison of the second digital comparator.

[7] The organic EL drive circuit as claimed in claim 6, wherein the current drive circuit includes registers having the light emitting time data, the registers of the current drive circuits are connected in series to constitute a shift register and the means for converting the display data into the light emitting time data is constructed with a memory and provided for the current drive circuits commonly.

[8] The organic EL drive circuit as claimed in claim 7, wherein the current drive circuit includes a one-shot circuit for receiving the output of the first digital comparator, the

output stage current source includes an output transistor, which is turned ON correspondingly to the PWM pulse, for outputting the drive current and a transistor connected in parallel to the output transistor to generate a peak current and the transistor for generating the peak current is kept ON for a constant time period by the output of the one-shot circuit.

[9] An organic EL display device comprising an organic EL drive circuit as claimed in any of claims 1 to 8.